Silent bruises:

Essays on determinants of intimate partner violence in India, and its consequences

Pre-submission Synopsis

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1. Context

Violence against women (VAW) is defined as "any act of gender-based violence that results in or is likely to result in, physical, sexual or psychological harm or suffering to women, including threats of such acts, coercion or arbitrary deprivations of liberty, whether occurring in public or private life" (United Nations, 1995, p. 48). Such violence is endemic in the everyday life of women. It encompasses two types of violence:

(i) violence by an intimate partner, who may be the current or ex-spouse or sexual partner (referred to as Intimate Partner Violence, IPV), and

(ii) violence perpetrated by someone other than a partner (non-partner sexual violence).

Because of its high rate of prevalence, the focus of this study will be solely on IPV.

IPV refers to "any behaviour within an intimate relationship that causes physical, psychological or sexual harm to those in the relationship" (Heise & Garcia-Moreno, 2002, p. 89). An intimate partner is a person with whom one has a "close personal relationship that may be characterized by the partners' emotional connectedness, regular contact, ongoing physical contact and sexual behaviour, identity as a couple, and familiarity and knowledge about each other's lives" (Breiding et al., 2015, p. 11).

There is now conclusive evidence that spousal violence is a widespread global phenomenon. The World Health Organization (2021) reports that 27 per cent of ever-married women aged 15-49 years worldwide have experienced IPV. In India, an analysis of the Demographic Health Survey (DHS) reveals that the prevalence of IPV was 31 per cent in (2015-16), which reduced marginally to 29 per cent in 2019-21 (International Institute of Population Science, 2021). The incidence of such violence was highest in Karnataka and Bihar (more than 40 per cent). Tamil Nadu, Telangana, Uttar Pradesh, Assam, Jharkhand, Odisha, and Andhra Pradesh (more than 30 per cent) were next, followed by West Bengal and Maharashtra (between 25-30 per cent). Given how highly stigmatized such violence remains, these figures are likely to be underestimated (World Health Organization, 2021).

Existing studies have shown that IPV is a human rights violation with detrimental consequences for the victim's health and welfare (García-Moreno et al., 2013). It has an impact

on women's reproductive health and can result in, among other things, unintended pregnancies, induced abortions, miscarriages, and sexually transmitted diseases (Bramhankar & Reshmi, 2021; Ogland et al., 2014). Women who have been exposed to IPV are more likely to experience mental health issues such as depression and suicidal ideation (Devries et al., 2013). Such violence also imposes significant social and economic costs on governments, communities, and individuals, such as increased medical costs for victims and the costs of providing social assistance (Kabeer, 2014). Besides, it reduces the victim's productivity and results in lost working days, thereby undermining the economic development of a country (Duvvury et al., 2013). Recognizing these issues, the global community has specifically highlighted the need to attain gender equality through reduction of violence against women; this concern has been expressed by incorporating these issues into the Sustainable Development Goals (SDGs) 5.2 and 16.1.

2. Literature review

The existing literature on IPV has examined a range of individual and family-level factors that contribute to spousal violence, including a women's age (Mukamana et al., 2020), her education level (Erten & Keskin, 2018; Ghislandi et al., 2020), her socioeconomic status (Ackerson & Subramanian, 2008a; Mukamana et al., 2020; Stöckl et al., 2021), exposure to mass media (Rahman et al., 2013), and place of residence (Garg et al., 2021; Mukamana et al., 2020).

Additionally, there is a growing body of research in this field examining the impact of women's empowerment on their exposure to IPV. However, the measurement of empowerment poses challenges. Apart from the epistemological difficulties in defining and analysing empowerment based on sociocultural and political notions (Scott, 1986 and Spivak, 1988 as cited in Thomas, 2016), women's empowerment has several dimensions and is context-dependent (Do & Kurimoto, 2012; Pratley, 2016). Most studies, therefore, have used a proxy of empowerment like the violation of hypergamy (Roychowdhury & Dhamija, 2022),[1] education (Ghislandi et al., 2020), employment (Dalal, 2011) and relative financial contribution to the household (Abramsky et al., 2019). But none of these characteristics reflects empowerment in a complete sense. Other studies have used techniques such as principal component analysis to create composite indices of various dimensions of women's empowerment (Gupta & Yesudian, 2006;

[1] Here hypergamy refers to the practise of females marrying a more educated spouse.

Srivastava & Kumar, 2018), but this may lead to endogeneity due to errors in empowerment level measurement.

Empirical studies of the effect of empowerment on IPV have failed to produce compelling evidence on the nature of this relationship. Some studies have argued that empowerment enhances bargaining power within a relationship and strengthens a woman's exit option from an abusive relationship (Women's World Banking, 2019), thereby shielding women from violence (Akilova & Marti, 2014; Bengesai & Khan, 2021; Rahman et al., 2013). Other studies focus on the challenge posed to the existing social order by empowerment, which may expose women to a male backlash and increase the risk of IPV (Roychowdhury & Dhamija, 2022; Vyas & Watts, 2009; Weitzman, 2014). The contradictory evidence may be interpreted to suggest either the presence of non-linearity in the relationship between empowerment and spousal violence, or variations in the relationship across a third factor like education and economic status. This aspect, however, has not been examined in previous research.

Furthermore, the majority of these researchers have focused on individual and family-level factors that contribute to spousal violence. More recently, a substantial body of research is acknowledging the importance of contextual factors and spatial spillovers underlying IPV (Gracia et al., 2021, 2018, 2015). This realisation has led studies to explore the spatial dimensions of the phenomenon (Amegbor et al., 2021; Amegbor & Rosenberg, 2019; Angaw et al., 2021; Fontes et al., 2018; Gracia et al., 2014, 2015, 2018, 2021; Montoriol et al., 2018; Oliveira et al., 2019; Seid et al., 2021; Tusa et al., 2022). However, these studies have only been undertaken for African, Latin American, and European countries. Similar studies for India are absent. Additionally, most studies have generally focussed on IPV, without distinguishing its form.[2]

The impact of IPV is not only restricted to women; studies have shown that spousal violence against women also has an impact on the health and other outcomes of their children. Since Felliti's (1998) classic study of the impact of Adverse Childhood Events (ACE), there have been several studies which have examined whether witnessing IPV as a child increases the likelihood of the respondent herself being exposed to such violence as an adult (Bensley et al.,

[2] Spatial analysis of sexual and physical IPV has been undertaken by Fontes et al. (2018) and Montoriol et al. (2018) respectively.

2003; Cannon et al., 2010; Renner & Slack, 2006; Thompson et al., 2006). To the best of our knowledge, there has not been any such study using Indian data. In addition, spousal violence is also found to be associated with higher rates of chronic malnutrition (Ackerson & Subramanian, 2008b; Chai et al., 2016; Neamah et al., 2018; Ziaei et al., 2014), higher rates of infant and child deaths (Ackerson & Subramanian, 2009; Silverman et al., 2009), and higher incidence of anaemia, asthma and acute respiratory infection (Ackerson & Subramanian, 2009; Hossain et al., 2019; Silverman et al., 2009) among children, along with lower rates of immunization (Sabarwal et al., 2012). However, these studies have failed to rule out the possibility of confounding variables which disempower a woman, make her more likely to face IPV, and adversely affect her child's nutritional or other outcomes; it may lead to the problem of endogeneity.

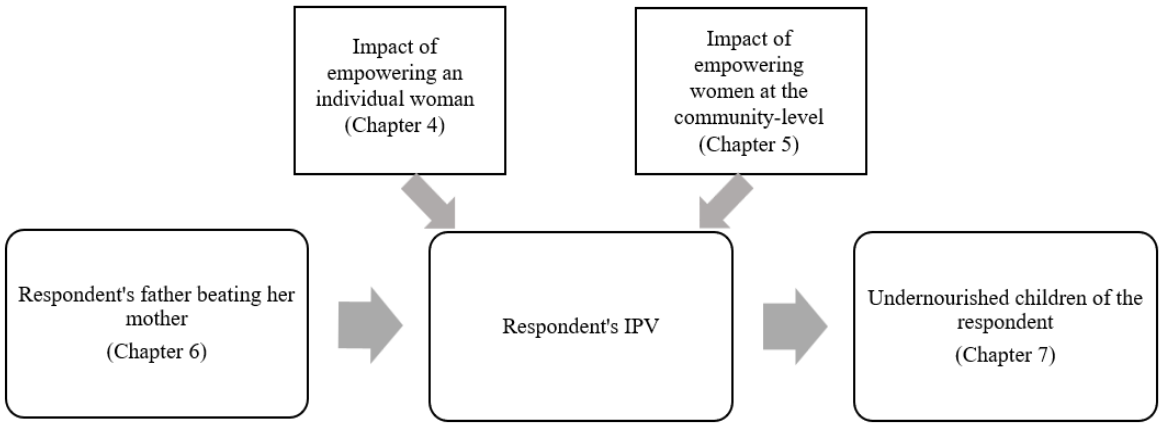
3. Research objective and relevance

3.1 Research hypotheses

The dissertation examines the determinants and consequences of spousal violence using data from the DHS. Specifically, it seeks answers to the following questions:

1) What is the impact of empowerment on IPV?
2) What are the community-level factors driving IPV?
3) Does witnessing parental violence as a child increase respondent's exposure to becoming an IPV victim as an adult?
4) Does respondents' exposure to spousal violence increase the likelihood of their children being undernourished?

Figure 1: Summary of research questions


Impact of empowering an individual woman (Chapter 4)
Impact of empowering women at the community-level (Chapter 5)
Respondent's father beating her mother (Chapter 6)
Respondent's IPV
Undernourished children of the respondent (Chapter 7)

3.2 Social relevance

Even though India has achieved rapid economic growth in the past few years, it has failed to attain the Sustainable Development Goal (SDG) of achieving gender equality and meeting targets for reducing violence against women (SDG 5.2 and 16.1). Violence against women, particularly IPV, is a serious public health concern that has taken the lives of millions. This violence tends to increase during emergencies (including epidemics). The disruption of social networks and decreased access to services can exacerbate the risk of IPV during such times. The adverse health consequences of such violence on women and their children are significant (García-Moreno et al., 2005). Beyond the violation of human rights, the social and economic costs of violence against women undermine the economic development of a country. In recent years, there has been a growing recognition amongst policymakers and activists of the need to prevent IPV, particularly as the health, administration and social welfare costs of violence against women are substantial ($21.7 billion a year) and is expected to reach $323.4 billion by 2044-45 (Our Watch, n.d.). Given that systematic patterns of behaviours drive IPV (World Health Organization, 2019), the identification of such drivers will facilitate the prevention of IPV. Our study is an attempt in this direction.

4. Data

This study uses data from the third, fourth and fifth rounds of the DHS conducted in 2005-06, 2015-16 and 2019-21, respectively. The DHS is a large-scale nationally representative sample survey, which provides information on population, gender-related issues, health, nutrition, childhood mortality, HIV, and socio-economic variables. It is undertaken by the International

Institute of Population Sciences under the guidance of the Ministry of Health and Family Welfare, Government of India. It is part of an international program covering 90 countries that have been in place since 1984.

When we started the research, in 2021, only DHS-3 and DHS-4 were available in the public domain. The initial part of the work was, therefore undertaken with these two data sets. The answers to the first two research questions were sought based on an analysis of DHS-3 and DHS-4 data. Subsequently, DHS-5 data was released in April 2022. While we could have continued with the data from the earlier rounds, we used the more recent DHS-5 data in the last two chapters of the thesis (chapters 6 and 7). The comparability of the findings across different rounds may be questioned. However, we are answering different, unrelated questions using DHS-5 data. Further, given that demographic and socio-cultural variables change slowly, comparability is not likely to be a major problem as the difference between the fourth and fifth rounds may plausibly be expected to be marginal, and may be mainly attributed to sampling errors.

DHS-3 collected information from 124985 women aged 15-49 years from 109041 households, whereas DHS-4 collected information from 699,686 women aged 15-49 years from 601,509 households. DHS-5 provided data on 724115 women aged 15-49 years from 636699 households. Out of the women interviewed, 69438, 66013, and 63851 women completed the domestic violence module in successive rounds of the DHS.

In addition to the DHS data, the study also uses data from the fourth round of the District Level Household Survey (DLHS4, 2012), Annual Health Survey (2012), and Census 2011 to obtain district-level information on certain variables used in the study. The details of these sources will be discussed in the relevant chapters.

5. Summary of findings

5.1 Empowerment & IPV

The relationship between IPV and empowerment is examined in Chapter 4. Existing studies on this issue broadly subscribe to what may be called the shielding hypothesis (Akilova & Marti, 2014; Bengesai & Khan, 2021; Rahman et al., 2013) or the exposure hypothesis (Roychowdhury & Dhamija, 2022; Weitzman, 2014). Researchers subscribing to the former

hypothesis believe that empowered women are less likely to face IPV, whereas the latter hypothesis states that empowered women are more likely to challenge patriarchal beliefs, resulting in a male backlash in the form of, inter alia, spousal violence. Based on a conceptual model we argue that, while empowerment reduces the risk of facing IPV (shielding hypothesis), the protective effect of empowerment reduces as women become more empowered. In particular, the following research hypotheses were formulated:

1) Empowerment shields women from violence
2) The shielding effect weakens as empowerment levels increase

A control function approach has been used to test the relationship between empowerment scores (constructed using a MIMIC model) and whether the respondent had faced IPV. The summary results of the control function model regressing empowerment, instrumented by financial knowledge, on IPV is provided in Table 1.

Table 1: Summary regression results of empowerment on IPV

Variable	**2005-06**			**2015-16**		
	Coefficient	**95% CI**		**Coefficient**	**95% CI**	
Empowerment	1.40***	1.10	1.70	-0.35**	-0.67	-0.04
Control variables	Yes			Yes		
State dummies	Yes			Yes		
Model statistics						
Number of observations	6363494			6010421		
Wald $\chi 2$	1019522.41***			983169.26***		
Wald test of exogeneity	91.48***			817.26***		

Note: *Weights used in the estimation process. ***, ** and * denotes Prob. <0.01, < 0.05 and <0.10, respectively.*

In 2005-06, the regression coefficient of empowerment is positive, indicating that empowered women are more likely to face violence. The results in 2015-16, however, provide evidence in favour of the shielding hypothesis— as women's empowerment level increases, their exposure to spousal violence decreases. Further, the result varies across the forms of IPV. Older women, who are less educated, belong to poorer households, or socially disadvantaged groups, have more daughters, or have alcoholic husbands are more vulnerable to facing spousal violence. Although our analysis validates the first hypothesis in 2015-16, the results do not support the

second hypothesis (viz. the shielding effect will weaken as the empowerment level rises) as the probability of facing violence remains the same across empowerment quintile levels (Table 4.6).

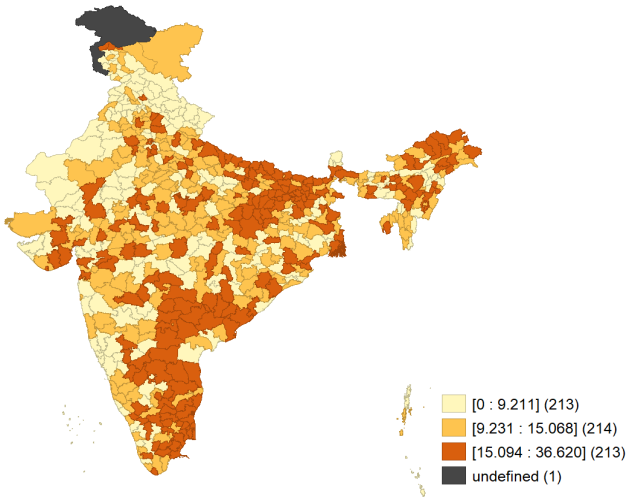
5.2 Community-level drivers of IPV

Existing studies on IPV have primarily focused on individual-level factors. However, IPV is a community-level phenomenon. Moreover, empowering a group of women may be more effective than empowering them individually. Chapter 5, therefore, explores the community-level factors that influence the level of IPV in the community. Since local community-level data is unavailable, the dissertation focuses on examining the district-level (the smallest unit for which data is available) variations in the incidence of different forms of IPV using data from DHS-4, District Level Household Survey (Fourth Round, 2012), Annual Health Survey (2012), and Census 2011. Specifically, the following research hypotheses were examined:

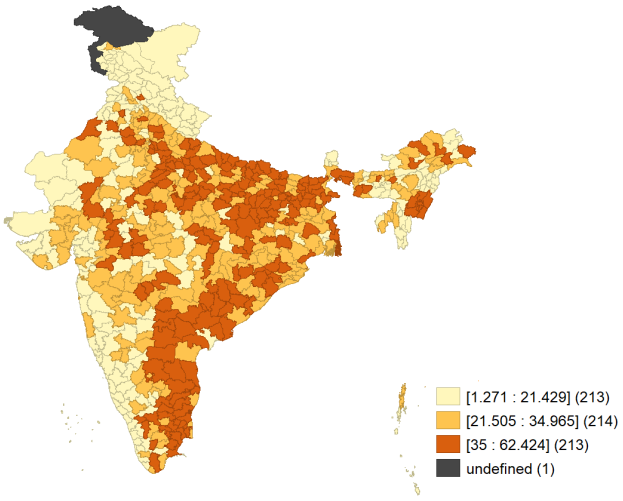
1) There is a deterministic spatial pattern in the incidence of IPV
2) The patterns in the spatial distribution of the different types of IPV are overlapping
3) There is spatial diffusion of IPV to neighbouring districts
4) The incidence of IPV in a district also depends on women's empowerment levels, child sex ratio, road development, the proportion of socially disadvantaged communities, and female workforce participation rates in that district

The analysis carried out using spatial analytical methods provided convincing evidence in support of each of the aforementioned hypotheses. The choropleth maps (Figure 2) and Getis-Ord Gi* statistic (Figure 3) indicated an East-West divide in the prevalence of all four types of IPV.

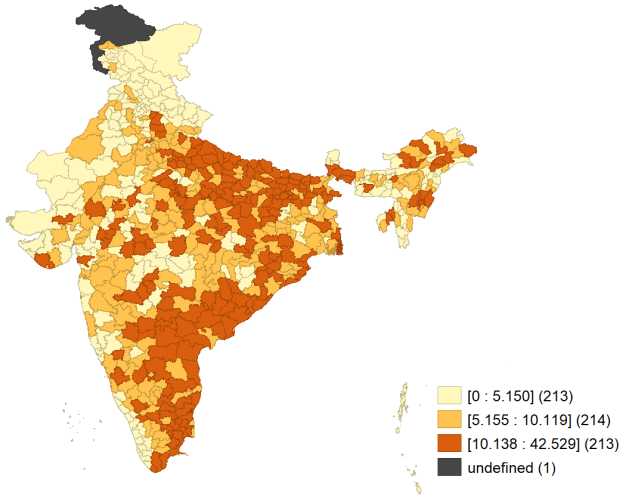
Figure 2: Choropleth maps for the incidence of IPV



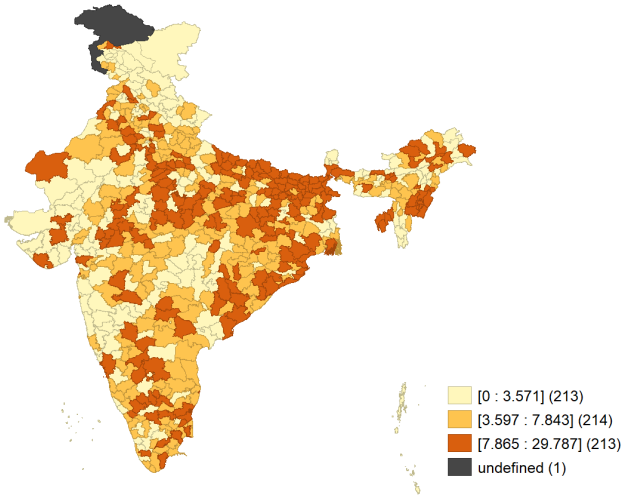
i. Emotional IPV



ii. Less Severe Physical IPV



iii. Severe Physical IPV

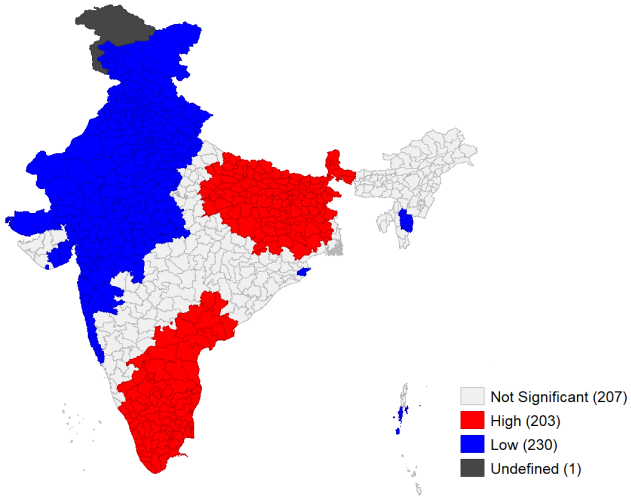


iv. Sexual IPV

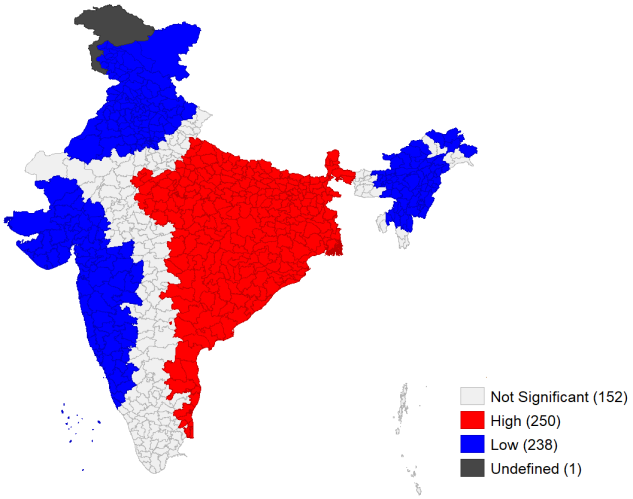
Note: *The lighter colours indicate a lower incidence of IPV and the darker colours indicate a higher incidence of IPV.*

Hotspots for physical IPV (both less severe and severe violence) were observed in the country's east, excluding the northeast. Hotspots for emotional IPV were found in eastern districts of Bihar, West Bengal, and parts of south India; whereas hotspots for sexual IPV were found in eastern states such as Bihar, West Bengal, Odisha, Jharkhand, and Eastern Uttar Pradesh.

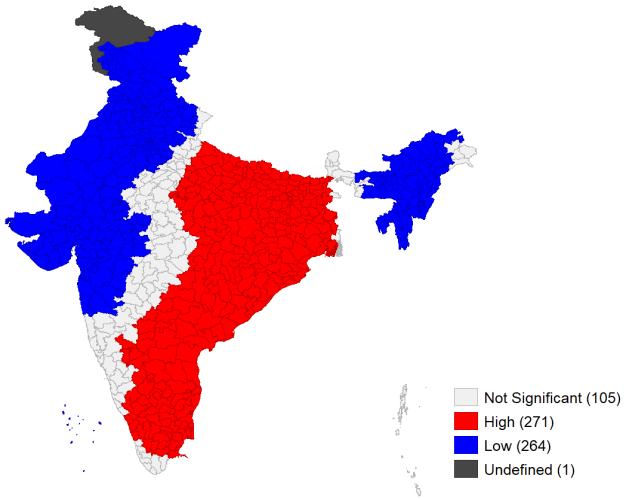
Figure 3: Choropleth maps for Getis-Ord Gi* statistic for different forms of IPV



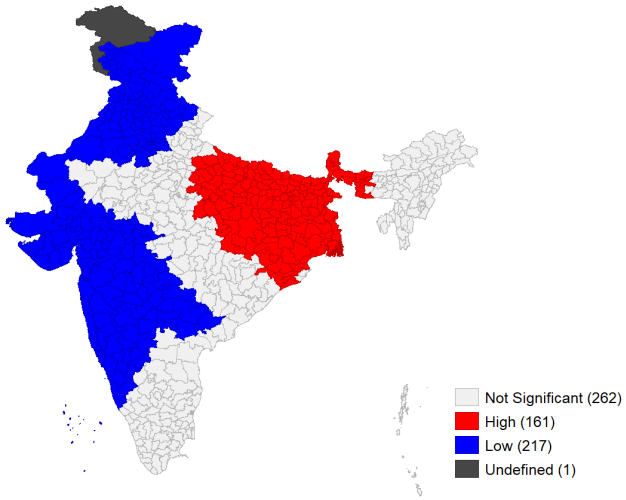
i. Emotional IPV



ii. Less Severe Physical IPV



iii. Severe Physical IPV

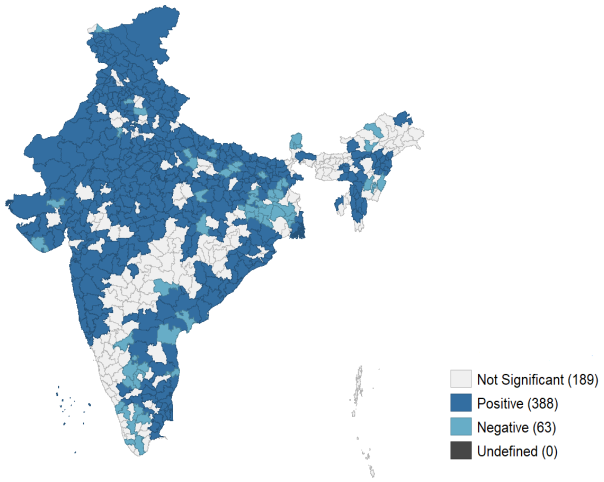


iv. Sexual IPV

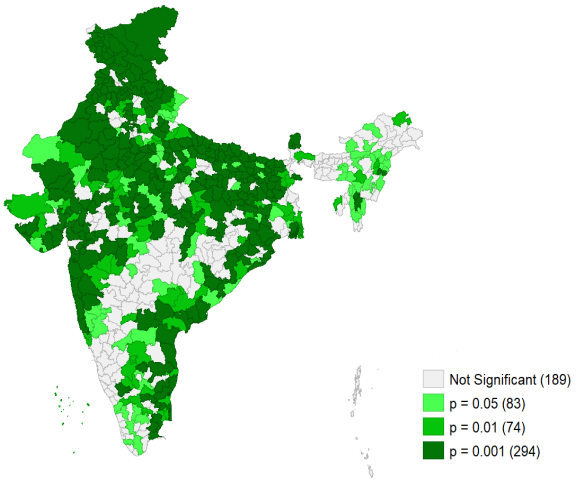
Note: *The three categories indicated in the map are hotspots (red colour), cold spots (blue colour), and insignificant (white colour).*

Furthermore, a significant overlap in the spatial pattern of different IPV categories was confirmed using the Multivariate Geary statistic (Figure 4).

Figure 4: Multivariate Geary Cluster and Significance Maps for categories of IPV



i. Multivariate Geary Cluster Map



ii. Multivariate Geary Significance Map

The findings of the spatial autoregressive moving average (SARMA) model (Table 5.3) show that there were spatial spillover effects in the incidence of IPV (all forms), implying that violence levels in one district affect violence levels in neighbouring districts. We also found that such violence is expected to decrease as women's empowerment levels rise. However, as the child sex ratio (a proxy for attitudes towards women), road connectivity, and the proportion of socially disadvantaged groups increase, so do all forms of violence. IPV remained unaffected by female labour-force participation rates. Finally, the results from the geographically weighted regression (GWR) models demonstrated that the impact of each of these influencing factors on IPV varied across districts (Figure 5.6).

5.3 Violence as a legacy

One of the adverse consequences of spousal violence, as discussed in Chapter 6, is that witnessing parental abuse as a child may increase the likelihood of becoming a victim of IPV as an adult. The following research hypotheses were evaluated using DHS-5 data:

1) Witnessing father-to-mother physical violence as a child increases the respondent's likelihood of facing any form of spousal violence as an adult,
2) The effect of childhood exposure to violence on adult IPV victimisation varies across respondents' education and employment status, empowerment levels, household wealth, and place of residence.

Now social stigma may lead to underreporting of both witnessing violence and experiencing it as an adult. The DHS cannot distinguish between respondents' actual and reported IPV experiences. It means that our findings only provide a lower bound on the treatment effect of witnessing parental violence on adult IPV victimisation. The other form of underreporting (viz. underreporting of witnessing parental violence) has been addressed using non-parametric kernel estimates generating interval estimates for the Average Treatment Effect (ATE).

Table 2 reports the ATE of witnessing IPV as a child on the likelihood of facing IPV as an adult assuming no false positives in treatment effect, positive monotonic treatment selection (MTSP) and monotonic treatment response (MTR).

Table 2: Upper bounds of ATE of witnessing violence as a child on exposure to violence as an adult

Misclassification	Total	Rural	Urban
0 per cent	0.328	0.324	0.337
10 per cent	0.589	0.580	0.616
20 per cent	0.782	0.789	0.756
30 per cent	0.782	0.789	0.756

The findings reveal that childhood exposure to spousal physical violence increases the respondent’s likelihood of experiencing all forms of violence as an adult by about 33-79 per cent, particularly less severe physical violence (31-74 per cent) (Figure 6.4). While women without education, having lesser household asset holdings, and those living in rural areas are the most vulnerable, the treatment effect of witnessing violence as a child on exposure to violence as an adult does not vary across the empowerment levels and employment status of the respondent.

5.4 Violence as a bequest

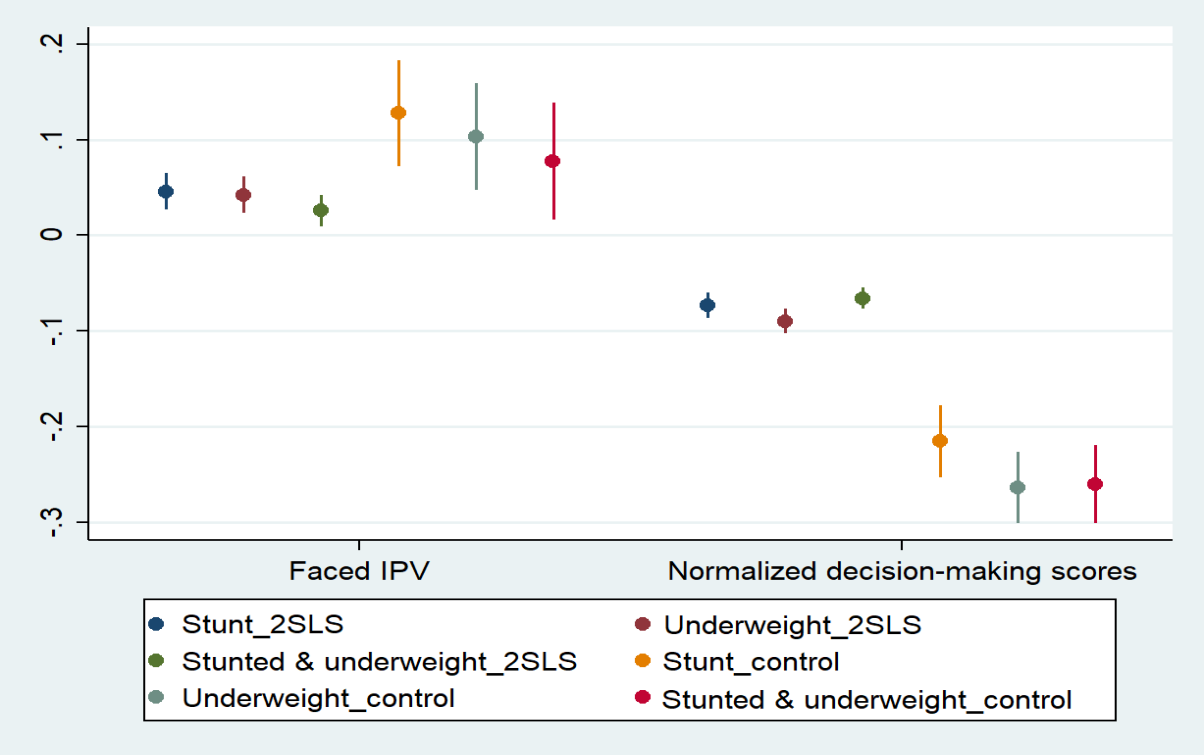
Spousal violence against women can have a negative impact on their children's nutritional status, leading to stunting, being underweight, or both. This aspect was examined using DHS-5 data in Chapter 7, and the following research hypotheses were developed:

1) Mothers who have experienced spousal violence are more likely to have undernourished (stunted, underweight, or both) children

2) As the mother's levels of empowerment increase, her child's likelihood of malnutrition decreases
3) Child's nutritional outcomes also depend on mothers' education, employment, access to media, father's education, gender of the household head, household asset holdings, place of residence and region
4) Characteristics of a child is also important – male children, those who are older, and having a higher birth order are the groups at risk for malnutrition

To ensure the robustness of the findings, the relationship between maternal IPV exposure and children's nutritional outcomes was examined using two models: the two-stage least squares (2SLS) method and a control function approach. The regression coefficients are plotted in Figure 5.

Figure 5: Regression coefficients for malnutrition



Note: *2SLS and control represents estimates for instrumental variable regression and control function approaches respectively. Respondents' childhood exposure to IPV and the financial control index were used as instruments for their current IPV experiences and decision-making abilities respectively.*

The results provided evidence in favour of all four hypotheses. Mother's experience of spousal violence increases the child's risk of stunting (β=0.13; 95%CI: 0.07-0.18), underweight (β=0.10; 95%CI: 0.05-0.16), or both (β=0.08; 95%CI: 0.02-0.14). Further, the risk of malnutrition decreases with an improvement in the mother's decision-making power. The findings also show that educated mothers, having educated spouses, frequently accessing the media, from affluent families, belong to male-headed families, and residing in urban areas are less likely to have malnourished children. It is also observed that working mothers and those from the Northern vis-a-vis Southern regions are more likely to have undernourished children. Children with a higher birth order and (surprisingly) male children are more likely to suffer from malnutrition.

6. Policy recommendations

The analysis of the 2015-16 data reveals the shielding effect of empowerment, implying that, in recent times, the situation seems conducive for empowering women to reduce IPV. The dissertation shows that policies aimed at empowering women should prioritize women's education and provide opportunities for women's asset ownership, such as through property laws (Agarwal et al., 2008) and microfinance programmes (Swain & Wallentin, 2009). In addition, policy efforts should be directed towards the collective empowerment of women, which is an important tool to reduce IPV (Chapter 5). This can be achieved by augmenting the social capital and strengthening the deterrence system to enable women facing such violence to obtain community support and seek relief more easily. Simultaneously, male members should also be covered through awareness-building campaigns to reduce their resistance to women's empowerment. The study further recommends geographical targeting of policies through flagship programmes (Chapter 5) such as the Aspirational District Programme[3] as a cost-effective and efficient means of reducing spousal violence. Such policies are particularly useful in India, where the incidence of IPV and the impact of each of its drivers vary regionally. It would also generate positive externalities, allowing the diffusion of the effects of such policies to neighbouring areas. Finally, to break the 'transmission' of violence from mother to child, identifying families where adult women are exposed to spousal violence and providing counselling and psychological support to the children of such families is essential. Effective implementation of steps is not easy—given the social stigma involved with being a victim of

[3] Under the scheme, districts with poor performance in five dimensions (Health and Nutrition, Education, Agriculture and Water Resources, Financial Inclusion and Skill Development and Infrastructure) are targeted to ensure convergence with other districts.

spousal violence—but is important to attain the fifth Sustainable Development Goal relating to gender equity.

7. Limitations

The dissertation, however, has some limitations as mentioned below.

(i) The study assumes no reporting bias in the incidence of spousal violence. This is because the DHS does not distinguish between actual and reported spousal violence.

(ii) Studies have shown that dowry is a significant contributor to IPV (Dandona et al., 2022; Jeyaseelan et al., 2007; Naved & Persson, 2010); but this aspect has not been considered in this dissertation as DHS does not collect information on dowry.

(iii) The information on the dietary practices of children is an important determinant of their health outcomes, but it could not be incorporated into our analysis of IPV and child malnutrition.

These limitations result from the absence of required information in the DHS data set. To address these issues, we propose ethnographic studies and case studies. Such studies will be useful for distinguishing between actual and reported IPV and investigating its relationship with empowerment levels. Secondly, the research could be extended to assess the negative effects of dowry on IPV incidence.

The thesis can also be extended in other directions. We suggest that future research may focus on the role of the socio-cultural and economic context in mediating the relationship between IPV and empowerment. Incorporating variables such as women's social capital, SHG participation, and deterrence factors would also have significant policy implications. Secondly, the analysis may be extended by assessing the role of deterrence factors, including community-level factors and peer monitoring, in lowering IPV levels. Third, examining other types of ACEs and their relationship to adult IPV victimisation suggests an exciting area in which research can be extended. Finally, incorporating data on children's dietary practices through primary surveys is an important area for research, as it will provide useful insights into the relationship between child malnutrition and IPV.

8. Final word

To sum up, IPV has major implications for gender equality, growth, and inclusive development. The present study indicates that empowering women can help in the reduction of IPV. This, in turn, may have a chain effect and contribute to the reduction of violence in future generations.

Lowering the incidence of IPV may also have substantial benefits on the children's health and welfare. Reducing IPV levels, therefore, is critical to achieving the Sustainable Development Goals (SDG) targets for providing healthy lives (SDG 3), promoting gender equality (SDG 5), reducing violence against women (SDG 16), combating malnutrition (SDG 2), and sustaining an inclusive development (SDG 8).

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